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ओपन फ्रंट यांत्रिक पावर प्रेस — शब्दावली

Indian Standard

OPEN FRONT MECHANICAL POWER PRESSES — VOCABULARY

ICS 01.040.25; 25.120.10

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

February 2003 **Price Group 5**

Metal Forming Machines Sectional Committee, BP 04

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 8540 : 1993 'Open front mechanical power presses — Vocabulary' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Metal Forming Machines Sectional Committee and approval of the Basic and Production Engineering Division Council.

The text of the International Standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker in the International Standard while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

c) Only English version of ISO Standard has been adopted as Indian Standard.

Indian Standard

OPEN FRONT MECHANICAL POWER PRESSES — VOCABULARY

1 Scope

This International Standard gives the nomenclature relating to the main parts of open front mechanical power presses.

NOTE — In addition to terms used in two of the three official ISO languages (English and French), this International Standard gives the equivalent terms in the German language; these are published under the responsibility of the member body for Germany (DIN). However, only the terms given in the official languages can be considered as ISO terms.

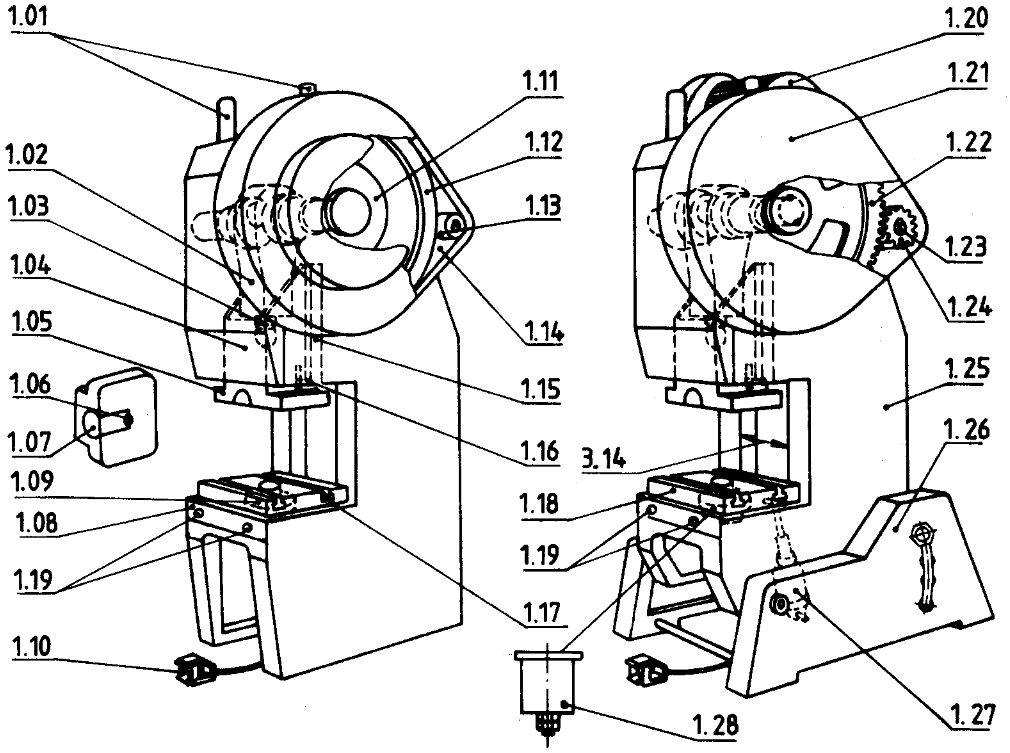
It also defines terms relating to the operation and the specifications of these presses.

This International Standard is intended to facilitate international communication in the field of mechanical power presses.

2 Terms and definitions

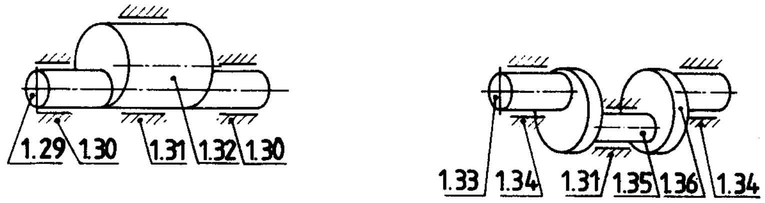
2.1 Nomenclature

See figure 1 and tables 1 and 3.



Flywheel press

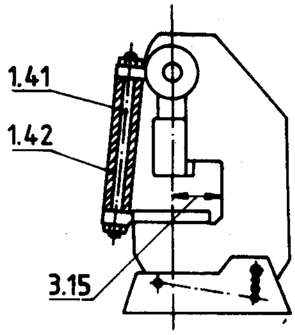
Gear-driven press

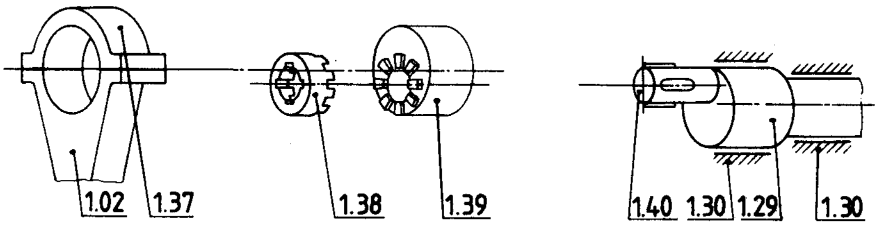


Fixed-stroke eccentric

Fixed-stroke crank

(For presses with the eccentric shaft mounted left-right, see figure 2)





Eccentric for adjustable stroke

(For presses with the eccentric shaft mounted forward-backward, see figure 3)

Figure 1 — Main parts of the machine

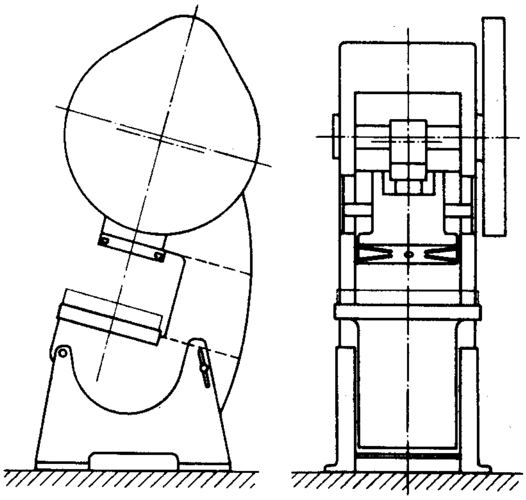


Figure 2 — Press with the eccentric shaft mounted left-right

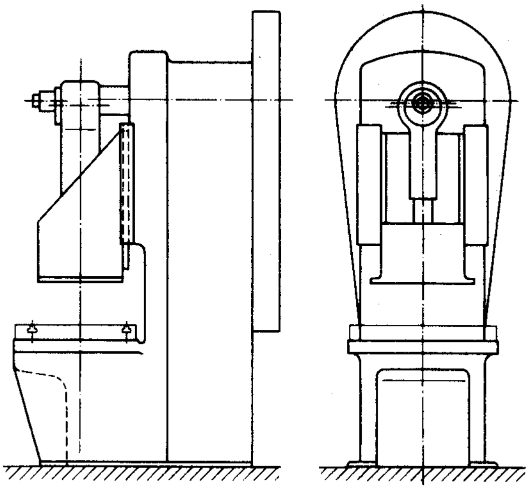


Figure 3 — Press with the eccentric shaft mounted forward-backward

Table 1

No.	English
1.01	Slide counterbalance
1.02	Connecting rod
1.03	Slide adjustment screw
1.04	Slide
1.05	Slide flange
1.06	Shank hole
1.07	Shank clamp
1.08	Bed
1.09	Bedplug/bedplate ring
1.10	Pedal
1.11	Clutch/brake
1.12	Flywheel
1.13	Motor pulley
1.14	Belt
1.15	Slide guide
1.16	Top knockout
1.17	T-slot
1.18	Bedplate/bolster
1.19	Two-hand control switches
1.20	Drive motor
1.21	Gearwheel guard/flywheel guard
1.22	Main gear
1.23	Drive shaft
1.24	Pinion
1.25	Frame
1.26	Leg
1.27	Inclining mechanism
1.28	Die cushion
1.29	Eccentric shaft
1.30	Eccentric shaft main bearing
1.31	Connecting rod bearing
1.32	Eccentric
1.33	Crankshaft
1.34	Crankshaft main bearing
1.35	Crank pin
1.36	Crank web
1.37	Connecting rod cap
1.38	Locking ring
1.39	Eccentric bush
1.40	Eccentric pin
1.41	Tie rod
1.42	Tie rod spacer

2.2 Terms relating to the operation of the machine

See table 2.

Table 2

No.	English
2.01	**stroke adjustment:** Mechanism for varying the stroke of the slide.
2.02	**inch; jog:** To move the slide in small steps (for example for tool-setting purposes).
2.03	**single stroke:** Single reciprocation of the slide from rest.
2.04	**continuous stroke:** Automatic repeated reciprocation of the slide.
2.05	**two-hand control:** Control for initiating a stroke of the slide requiring both hands of the operator to be used simultaneously.
2.06	**safety device:** Protective device, other than guard, eliminating or reducing danger.
2.06.01	**overload device:** Means of limiting the force exerted by the slide.
2.06.02	**anti-repeat device:** Means of preventing an unwanted repetition of stroke.
2.06.03	**photoelectric guard:** Light beam(s) arranged as a detecting curtain across the opening between the operator and the dangerous parts of the machinery, with an associated photoelectric detector.
2.07	**guard:** Physical barrier preventing or reducing access to a danger point or area.
2.07.01	**interlocking guard:** Guard with a movable part connected to the machinery controls so that access to the danger area is prevented during machinery operation.
2.08	**top dead centre:** Upper limit of the slide during its stroke for a given adjustment.
2.09	**bottom dead centre:** Lower limit of the slide during its stroke for a given adjustment.

2.3 Terms relating to the machine specifications

See figure 4 and table 3.

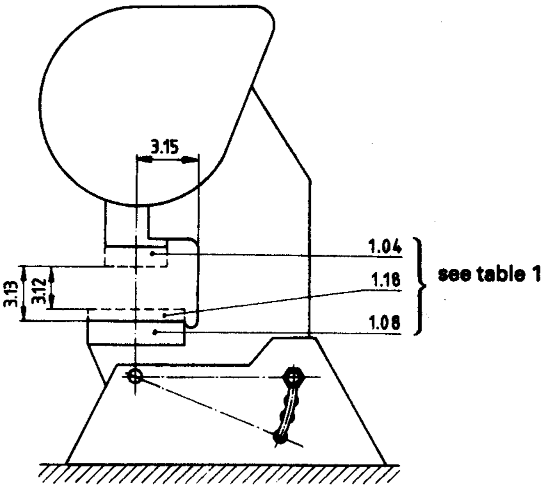


Figure 4 — Typical layout of a press

Table 3

No. N°	English
3.01	**nominal force F_n:** Maximum allowable pressing force which may act, before the bottom of stroke, as frequently as required through a given distance (the nominal force travel h_n) without damaging the press (used for example when testing stability).
3.02	**nominal force travel h_n:** Maximum distance above the bottom of the stroke of the slide, from which point downwards the nominal force F_n may act, as frequently as required without damaging the press. The nominal force travel h_n together with the nominal force F_n indicate the rating of the drive.
3.03	**variable speed range:** Lower and upper limiting numbers of continuous strokes per minute.
3.04	**slide stroke:** Distance between top and bottom dead centres.
3.05	**adjustable stroke length:** Lower and upper limiting values of the slide stroke.
3.06	**slide surface:** Lower surface of the slide provided for the mounting of the upper tool.
3.07	**slide adjustment:** Means of varying the distance from the bed (or bedplate) surface to the slide surface without affecting the slide stroke.

3.08	**bed surface**: Surface of the bed provided for the mounting of the lower tool or the bedplate.
3.09	**bed opening**: Hole through the bed provided for the discharge of components and/or scrap or for provision of die cushion.
3.10	**bedplate (bolster) surface**: Surface of the bedplate (bolster) provided for the mounting of the lower tool.
3.11	**bedplate (bolster) opening**: Hole through the bedplate (bolster) provided for the discharge of components and/or scrap or for operating the cushion pins located within the area of the opening.
3.12	**shut height** e_1: Distance from the bedplate surface to the slide surface measured with the maximum variable stroke, stroke down and slide adjustment up.
	NOTE 1 — Die height is used as the distance between bedplate and slide.
3.13	**bed to slide distance** e_2: Distance from the bed surface to the slide surface measured with the maximum variable stroke, stroke down and adjustment up.
3.14	**passage through frame**: Width of the clear passage through the press frame for the removal of the workpiece.
3.15	**throat depth**, a: Distance between the centreline of the shank hole and the frame edge nearest to the working area.

Annex A
(informative)

Bibliography

[1] ISO 6898:1984, *Open front mechanical power presses — Capacity and dimensions.*

[2] ISO 9188:1993, *Machine tools — Straight-sided single-action mechanical power presses from 400 kN up to and including 4000 kN nominal force — Characteristics and dimensions.*

[3] ISO 9189:1993, *Machine tools — Straight-sided high-speed mechanical power presses from 250 kN up to and including 4000 kN nominal force — Characteristics and dimensions.*

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